Clarification of December 30, 1999 Five Year Review

Name of Site: Norwood PCBs Superfund Site
Norwood, MA

Description of Site:

The Norwood PCBs Superfund Site (Site) is located on 26 acres of mainly commercial and industrial properties. The Site is bordered by Route 1, the Dean Street access road, Meadow Brook, Pellana Road, and Dean Street. The Site consists of several parcels of land, including the former Grant Gear facility; Kerry Place; and adjacent areas including Meadow Brook. In 1979, the Site was subdivided. The northeastern portion of the Site, approximately 9 acres in size, was purchased by Grant Gear Realty Trust and leased to Grant Gear Works, Inc. The southern and western portions of the Site were further subdivided, a major portion of which was named Kerry Place. Most of the lots now are occupied by commercial and light industrial buildings. Beginning in the 1940s, previous owners or operators of the Grant Gear building used polychlorinated biphenyls (PCBs) in the production of electrical transformers and other electrical components.

The Site has been addressed through initial removal actions and one long-term remedial action (RA) divided into three phases: groundwater (fund-lead), building demolition (PRP-lead), and soil/sediment (PRP-lead). Construction complete was achieved on September 23, 1999; however, RA complete has yet to be achieved for the soil/sediment phase since the final RA action report has not been submitted or approved. RA complete was achieved for the groundwater phase on November 16, 2000 and for the building demolition phase on August 8, 2001. The next Five Year Review is scheduled to be completed by November 22, 2004.

Purpose:

The purpose of this document is to clarify the protectiveness statement provided in the December 30, 1999 Five Year Review for the Site in response to the recent Resources for the Future study.

Revised Protectiveness Statement:

The remedy at the Site is expected to be protective of human health and the environment, and immediate threats have been addressed.

At the time of the Five Year Review, remedial activities were ongoing. The groundwater treatment plant was in operation and functioning properly. Nine extraction wells located in the northeast portion of the Site were successfully removing groundwater and sending it to the treatment plant where various processes (primarily precipitation and filtration) were removing contaminants prior to discharging to Meadow Brook. Groundwater cleanup standards (drinking water standards or MCLs) were consistently being met. Plant operations were suspended in June 2000 because the State submitted a Groundwater Use and Value Determination indicating that

groundwater in the vicinity of the Site was no longer considered a potential drinking water source. EPA also completed a Supplemental Risk Assessment to evaluate potential risks assuming the shutdown of the groundwater treatment plant. Ecological risks were insignificant and human health risks were significant only under a potential future use scenario. EPA is currently negotiating with potential developers and will require appropriate institutional and/or engineering controls to address human health risks should development occur. EPA is in the process of preparing an Explanation of Significant Differences to formally document the suspension of groundwater treatment. Ongoing groundwater and surface water monitoring activities document that this phase of the overall remedy remains protective of human health and the environment. Existing institutional controls, which restrict development and groundwater extraction amongst other things, are adequately protective.

Although building demolition activities were completed in 1997, a few remaining administrative items prevented the RA from being formally completed until August 8, 2001. Similarly, although soil/sediment construction activities were essentially completed in 1998, a few outstanding issues remain. In particular, a portion of the protective asphalt cap needs to be extended by less than a foot in order to provide the appropriate thickness and material over PCB consolidated soil/sediment. Cap extension activities are expected to be completed in 2001. All remaining administrative activities for the soil/sediment phase are scheduled to be completed in 2001 but will likely be completed in 2002 after which revised institutional controls will be put in place.

Given the ongoing activities mentioned above, the remedy at the Site is expected to be protective of human health and the environment, and immediate threats have been addressed.

Sharon M. Hayes, RPM
Office of Site Remediation & Restoration

11-26-01
Date

U.S. EPA - NEW ENGLAND

OFFICE OF SITE REMEDIATION AND RESTORATION

FIVE-YEAR REVIEW
NORWOOD PCBS SUPERFUND SITE
NORWOOD, MASSACHUSETTS

DECEMBER 1999

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FIVE-YEAR REVIEW
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I. Introduction

a. Authority Statement

U.S. EPA - New England conducted this statutory Five-Year Review pursuant to CERCLA section 121(c), NCP section 300.400(f)(4)(ii), and OSWER Directives 9355.7-02 (May 23, 1991), 9355.7-02A (July 26, 1994), and 9355.7-03A (December 21, 1995). This is the first Five-Year Review conducted at this Site. The purpose of a Five-Year Review is to ensure that a remedial action remains protective of public health and the environment and is functioning as designed. This document will become part of the Site file. This review (Type 1a) is applicable to a Site where remedial action is ongoing.

b. Background

The Norwood PCBs Superfund Site (Site) is located on 26 acres of mainly commercial and industrial properties. The Site is bordered by Route 1, the Dean Street access road, Meadow Brook, Pellana Road, and Dean Street. The Site consists of several parcels of land, including the former Grant Gear facility; Kerry Place; and adjacent areas including Meadow Brook. In 1979, the Site was subdivided. The northeastern portion of the Site, approximately 9 acres in size, was purchased by Grant Gear Realty Trust and leased to Grant Gear Works, Inc. The southern and western portions of the Site were further subdivided, a major portion of which was named Kerry Place. Most of the lots now are occupied by commercial and light industrial buildings. Beginning in the 1940s, previous owners or operators of the Grant Gear building used polychlorinated biphenyls (PCBs) in the production of electrical transformers and other electrical components.

Groundwater is contaminated with PCBs, volatile organic compounds (VOCs) such as trichloroethylene (up to 1,700 ppb) and vinyl chloride, and semivolatile organic compounds (SVOCs). Soil and sediments are contaminated with PCBs (up to 26,000 ppm), polycyclic aromatic hydrocarbons (PAHs) and heavy metals.

The Site has been addressed through initial removal actions and one long-term remedial action focusing on the cleanup of the entire Site. In 1983, after MADEP detected high levels of PCBs in the soil on the Site, EPA conducted an emergency removal of over 500 tons of highly contaminated soil and transported it to an approved disposal facility. In 1986, MADEP installed a 4-foot high wire mesh fence around a 1.5-acre portion of the Site and constructed a protective liner made of gravel and fabric behind the Grant Gear building to limit access to areas with the highest concentration of PCBs in surface soils. EPA also finalized the Site on the National Priorities List in 1986, making the Site eligible for Superfund cleanup funds. EPA conducted the

Remedial Investigation and Feasibility Study and selected the remedy in a 1989 Record of Decision (ROD). The 1989 ROD included excavating and treating soils/sediments by solvent extraction; decontaminating the Grant Gear building; and pumping and treating contaminated groundwater. The facility to treat contaminated groundwater began operating in 1996. In May 1996, EPA published an amendment to the selected remedy due to higher than anticipated solvent extraction cost estimates and other technical difficulties, and also to promote the reuse of the Site for commercial or industrial use. The amended remedy included demolishing the Grant Gear building and excavating and consolidating contaminated soils/sediments under asphalt cap and cover areas. EPA also agreed to complete the Town of Norwood's flood control project within the area of the Site by restoring and stabilizing the side slopes and bottom of Meadow Brook after contaminated sediments were removed.

Groundwater treatment and Meadow Brook restoration activities were Fund-lead while building demolition and cap/cover activities were completed by contractors for the Settling Defendants. EPA utilized the U.S. Army Corps of Engineers (USACE) as its construction and oversight manager for all remedial action activities.

II. Discussion of Remedial Objectives

EPA issued one ROD and one amended ROD for Operable Unit #1 at the Site. Three separate cleanup phases were completed – one by EPA (Phase 1) and two by the Settling Defendants (Phases 2 and 3). EPA also completed Meadow Brook restoration activities as part of Phase 3. Cleanup and restoration phases are described below:

a. Phase 1 - Groundwater Treatment

In accordance with the 1989 ROD, EPA (under the construction management of USACE) completed the construction of a 6,000 square foot groundwater treatment plant at the northeastern edge of the Site in November 1995. EPA and MADEP performed a pre-final inspection of the plant on January 11, 1996 after which the treatment plant began operating.

During construction of the groundwater treatment plant foundation, PCB contaminated soil was excavated, relocated, and stockpiled onsite. PCB contaminated soil from four outlying areas were also excavated, relocated, and stockpiled onsite. These soils (approximately 2,000 cubic yards) were subsequently consolidated onsite under cap/cover areas during Phase 3a activities.

A series of nine extraction wells located in the northeast portion of the Site collect contaminated groundwater. Once collected, the water is pumped into the plant and inorganic contaminants are removed in a precipitation process where metals, in the form of particulates, settle out of the water. After dissolved metals are removed via precipitation, the remaining undissolved solids are removed via filtration. The metallic sludge is then pressed and the resulting filter cake is trucked to an offsite disposal facility. As of August 1999, 25,080 pounds of filter cake have been disposed of at the Turnkey Landfill in Rochester, New Hampshire. Organic contaminants,

including PCBs, are removed in an air stripper/carbon adsorption system. During this process VOCs are transferred from the water to the air stream. A catalytic oxidation unit (CatOx) then destroys the VOCs in the air stream before being discharged to the atmosphere. Water exiting the air stripper is then forced through tanks containing activated carbon which adsorb remaining organic contaminants and serves as a last polishing step before the treated water is tested and discharged to Meadow Brook.

Due to high operating costs the CatOx unit was taken off line in 1997 after supplemental tests and air dispersion modeling showed that untreated emissions were already well below regulatory limits prior to entering the CatOx. As a further cost savings effort the air stripper blower was shut off after the cascading effect of the water passing through the stripper was shown to be sufficient.

Although the plant was originally designed to treat groundwater at an average flow rate of 30 gallons per minute (gpm) and at a maximum flow rate of 60 gpm, the actual average flow rate is less than 10 gpm. In an effort to increase the average flow rate and hence the mass of contaminants removed, six of the nine extraction wells were redeveloped in June 1998. This effort increased the average flow rate in these six wells by 70%.

In September 1998, due to biological fouling of the carbon units which resulted in excess backpressure, the air stripper effluent was allowed to bypass the carbon vessels thus restoring the hydraulic functions of the plant. Historical data showed that the plant effluent would still meet the discharge criteria under this scenario.

Plant effluent concentrations have met all discharge criteria except for minor exceedances of the manganese discharge limit (100 ppb) in October 1998 (134 ppb) and April 1999 (582 ppb). Minor modifications were conducted after the October 1998 exceedance and resulted in levels below the discharge limit in January 1999. After the April 1999 exceedance, the effluent was resampled and was well below the discharge limit (2.6 ppb). The installation of the cap over the Site (June 1998) as well as the bypassing of the carbon vessels (September 1998) are being investigated as possible reasons for this problem. In order to further evaluate this issue and make the necessary adjustments, sampling for manganese removal is being conducted on a more frequent basis.

As of August 1999, approximately 13.5 million gallons of groundwater have been treated and about 105 kilograms of chlorinated VOCs have been removed from the groundwater beneath the Site. The treatment plant was constructed for a cost of approximately $11 million and is currently operated and maintained for a cost of approximately $500,000 per year. Monitoring and extraction wells are sampled quarterly and have been sampled on 14 occasions since startup.

In accordance with the Superfund State Contract between EPA and MADEP and pursuant to Section 104(c)(3) of CERCLA, the State has and continues to contribute 10% of the costs associated with the construction and restoration phases of groundwater remediation at the Site.

The State's obligation to assure operation and maintenance (O&M) of the groundwater collection and treatment system and monitoring well network will begin upon completion of the restoration phase, which is when the cleanup goals in the ROD are achieved or ten years have elapsed, whichever is earlier. The finding that the groundwater cleanup goals established in the ROD have been achieved will be based upon three years of groundwater monitoring to verify that cleanup goals have indeed been met. In the event that groundwater cleanup goals are achieved during the restoration phase, the State will have no obligation to assure O&M of the groundwater collection and treatment system and monitoring well network.

Groundwater cleanup standards were originally based on drinking water criteria. However, since the plant was constructed, the aquifer has been re-classified by the State and it is no longer a current or potential future drinking water supply. As a result, EPA is currently in the process of completing a site-specific risk assessment in order to revise groundwater cleanup standards. The risk assessment will address the following potential exposure pathways: 1) exposure of human receptors to VOCs volatilizing from groundwater and the vadose zone into the indoor air of a potential building on the Site, and 2) exposure of environmental receptors to groundwater contamination which may discharge to Meadow Brook. The revised cleanup standards will be consistent with the State's current groundwater classification and will address the potential future commercial/industrial reuse of the property.

b. Phase 2 - Building Demolition

In accordance with the 1996 amended ROD and a Consent Decree between EPA and the Settling Defendants, the 90,000 square foot, slab-on-grade Grant Gear building was demolished (rather than being decontaminated per the 1989 ROD). The one-story building was originally constructed in 1942 and contained a subgrade boiler room and two small second floor mezzanine areas. The building consisted mainly of a large open production area with several smaller areas sectioned-off for use as office and storage space. Demolition activities took place between October 1996 and February 1997 and was performed by GZA GeoEnvironmental, Inc. for the Settling Defendants. USACE provided onsite construction oversight. EPA and MADEP performed a final inspection on February 6, 1997.

The following activities were completed during the building demolition phase:

- inventory, consolidation, and offsite disposal of waste remaining from the former facility operations;
- abatement and offsite disposal of asbestos-containing materials from the building;
- closure of building drainage system including removal and disposal of free liquids and sediment from onsite manholes and grouting of building drain lines;
- removal and offsite disposal/recycling of exterior steel siding;
- removal and shredding of contaminated wooden roof decking (disposed onsite under cap/cover areas during phase 3);

- removal and crushing of brick, concrete, and wallboard (disposed onsite under cap/cover areas during phase 3);
- disposal of remaining facility equipment and certain building materials/debris in the subgrade boiler room, filling the remaining void spaces with "flowable fill", and constructing a 14-inch thick structural slab over the boiler room area;
- removal and offsite recycling/disposal of two 275-gallon and one 750-gallon empty aboveground condensation collection tanks; and
- removal and disposal in the boiler room of a 1,000-gallon empty underground tank (100 gallons of waste oil disposed offsite).

On January 20, 1999, EPA granted conditional approval of the building demolition Remedial Construction Report (RCR). Final approval will be granted upon receiving the following information which will be provided in the cap/cover RCR:

- survey information for the boiler room vault; and
- documentation of the cleaning/sealing of slab penetrations.

c. Phase 3a - Cap/Cover

In accordance with the 1996 amended ROD and a Consent Decree between EPA and the Settling Defendants, PCB contaminated soil and sediment were consolidated onsite under cap and cover areas (rather than being treated via solvent extraction per the 1989 ROD). Cap/cover activities took place between April 1997 and August 1998 and were performed by GZA GeoEnvironmental, Inc. for the Settling Defendants. USACE provided onsite construction oversight. EPA and MADEP performed a final inspection on August 11, 1998.

The following activities were completed during the cap/cover phase:

- consolidate approximately 2,000 cubic yards of PCB contaminated soil stockpiled onsite by EPA from groundwater treatment plant construction and outlying areas excavated during Phase 1;
- consolidate approximately 1,600 cubic yards of PCB contaminated soil stockpiled on the adjacent Reardon property;
- excavate PCB contaminated sediment in Reach 1, 2, and 3 of Meadow Brook (to the excavation grades established in USACE's restoration plans) and consolidate onsite;
- removal of additional stained sediment in Reach 1 and consolidate onsite;
- excavate on and offsite PCB contaminated soils and consolidate onsite;
- removal of "hot spot" soils below water table and relocate onsite;
- removal and disposal of one 10,000-gallon and one 20,000-gallon underground fuel oil tanks;
- install storm water runoff control/site drainage; and
- install asphalt cap (approximately 4.5 acres) and gravel covers (approximately 1.6 acres).

Cap/cover remediation activities were conducted in coordination with certain proposed redevelopment activities. Redevelopment plans have not been finalized. The following redevelopment activities were also completed during this phase:

- construct storm water detention basin (for both remedial and redevelopment purposes);
- install subsurface drainage structures;
- construct two retaining walls; and
- install electrical conduit and light pole bases.

EPA is currently reviewing the draft cap/cover RCR. In accordance with the Consent Decree, the Settling Defendants will be responsible for: 1) performing all O&M activities in order to maintain the integrity and effectiveness of cap and cover areas, and 2) conducting appropriate monitoring activities to assess the protectiveness and performance of the cleanup phases performed by the Settling Defendants. Such activities will be documented in O&M and environmental monitoring work plans which have yet to be finalized. O&M and environmental monitoring activities will initiate within 30 days of EPA's approval of the cap/cover RCR.

The estimated cost by the Settling Defendants for completing phases 2 and 3a is $6.6 million.

d. Phase 3b - Meadow Brook Restoration

In accordance with the 1996 amended ROD, and after the Settling Defendants had excavated contaminated brook sediments, EPA (under the construction management of USACE) restored and stabilized the side slopes and bottom of Meadow Brook in order to complete the Town of Norwood's flood control project within the area of the Site. Although the cleanup level for PCBs in brook sediments is 1 ppm, the brook was only excavated to the depths required to meet the contours of the flood control project. The side slopes and bottom of the brook were then restored with a layer of geotextile fabric and appropriate restoration materials (i.e., rip rap, interlocking concrete blocks, or precast concrete culvert sections) which covered any remaining contamination located at depths below the flood control contours. Restoration activities in Reach 1 of Meadow Brook (adjacent to the Site) took place between October 1997 and December 1997. Due to concerns related to the use of the interlocking concrete blocks on the steeper slopes within Reach 2, a decision was made to utilize precast concrete culvert sections. This redesign effort, as well as high water conditions, resulted in delays in completing restoration activities in Reach 2/3. Reach 2/3 activities took place between April 1999 and July 1999. EPA and MADEP performed a final inspection on August 11, 1999.

The following activities were completed during the brook restoration phase:

- prepare brook side slopes and bottom (excavate or backfill) consistent with flood control contours and restoration materials;
- install rip rap (upstream portion) and interlocking concrete blocks (downstream portion) on top of geotextile in Reach 1;

- install precast concrete culvert sections in upstream portion of Reach 2;
- install rip rap on top of geotextile in downstream portion of Reach 2;
- install rip rap 100 feet into Dean Street culvert (Reach 3);
- install topsoil and seed to top of slope and in voids of interlocking concrete blocks;
- encase two sewer syphon lines across brook;
- support 30 inch sewer main adjacent to brook; and
- restore work areas (replace fencing, hydroseed, plantings).

Meadow Brook restoration activities were conducted for a cost of approximately $775,000. Final survey plans and O&M instructions are being completed and will be provided to the Town of Norwood.

e. Preliminary Close Out Report

The Preliminary Close Out Report (PCOR) for this Site was finalized in September 1999. The Final Close Out Report (FCOR) will be completed when the revised groundwater cleanup standards have been met.

f. Explanation of Significant Differences

Upon establishing new groundwater cleanup standards based on the ongoing site-specific risk assessment, EPA will prepare an Explanation of Significant Differences (ESD) to document the following changes from the ROD/amended ROD/Consent Decree:

- revised groundwater cleanup standards (Phase 1);
- removal of additional PCB contaminated sediment in Reach 1 of Meadow Brook and onsite disposal under cap (Phase 3a - $34,350 from Settling Defendants' Norwood PCB Superfund Site Trust Fund);
- removal and offsite disposal of two underground fuel oil tanks (Phase 3a - $77,500 from Settling Defendants' Norwood PCB Superfund Site Trust Fund);
- removal and offsite disposal of underground storage tank contaminated soil (Phase 3a - $40,281.65 from Settling Defendants' Norwood PCB Superfund Site Trust Fund); and
- removal of 220 cubic yards of PCB contaminated soil during detention berm reconstruction activities and onsite disposal under cap (Phase 3a - $28,250 from Settling Defendants' Norwood PCB Superfund Site Trust Fund).

It is expected that the ESD, with public comment, will be prepared in 2000 after the groundwater risk assessment is completed.

g. Institutional Controls/Restrictions

In accordance with the ROD, institutional controls (hereafter referred to as "restrictions") were established for the Site in order to ensure the remedy remains protective of human health and the

environment under various use scenarios. The original restrictions were part of the Consent Decree entered into by the United States (plaintiff) and Grant Gear Works, Inc. and John and Robert Hurley (defendants) and was filed in court in December 1991. Under this Consent Decree, the following uses were restricted (except if required as part of additional remedial efforts or pursuant to a plan approved by EPA):

- residential use;
- withdrawal of groundwater;
- disturbance of contaminated, untreated soils;
- disturbance of soils (or other ground covering features) that cover disposal areas;
- disturbance of the Grant Gear building floor surfaces and subsurfaces;
- disturbance of the Grant Gear drainage system; and
- disturbance of any of the remedial measures implemented at the Site.

These restrictions have been revised in response to the amended ROD and the 1998 Agreement and Covenant Not to Sue entered into by U.S. EPA - New England and Joseph Laham/921, Inc. (hereafter referred to as the "Laham Prospective Purchaser Agreement" or "Laham PPA"). The revised restrictions are outlined in Exhibit 7 of the Laham PPA. The following uses are currently restricted (except if required as part of additional remedial efforts or pursuant to a plan approved by EPA, after a reasonable opportunity for review and comment by MADEP):

- agricultural, residential, or infant/childcare facility purposes, including any activities and uses related to educational and recreational activities;
- withdrawal of groundwater;
- any use or activity which interferes with the implementation, operation, or maintenance of response actions;
- any action or inaction that results in disruption of cap(s), cover(s), or other ground covering features of response actions or any action which compromises the protectiveness, integrity, or effectiveness of response actions; and
- any excavation, handling, or disposal of any loam, peat, gravel, sand, rock, or other mineral or natural resource.

These restrictions will ensure that the remedy is protective of human health and the environment under the current Site conditions. These restrictions may be further revised in accordance with future redevelopment plans.

III. Recommendations

It is recommended that the site-specific risk assessment be completed and that the groundwater cleanup standards be revised so they are consistent with the State's current groundwater classification. Upon meeting the revised cleanup standards, groundwater treatment should stop, but monitoring should continue to verify that cleanup standards have indeed been met. In the

meantime, it is recommended that groundwater continue to be treated in accordance with the current cleanup standards.

IV. Statement of Protectiveness

I certify that the remedies selected for this Site remain protective of human health and the environment.

V. Next Five-Year Review

Hazardous substances will remain at the Site above health-based levels after the completion of all remedial actions. Pursuant to CERCLA section 121(c), NCP section 300.400(f)(4)(ii), and OSWER Directives 9355.7-02 (May 23, 1991), 9355.7-02A (July 26, 1994), and 9355.7-03A (December 21, 1995), EPA must continue to conduct statutory Five-Year Reviews at the Site. The next Five-Year Review is scheduled to be completed by November 22, 2004, which is ten years after the initiation of construction of the groundwater treatment plant. This review will evaluate the performance of all remedial activities at the Site.

Patricia L. Meaney, Director
Office of Site Remediation & Restoration

12/30/99
Date